

~~QASTRA~~ ~~S.A.~~ KREL'SHTYN, B.I.; LYAPIN, S.Ye.; SHIDLOVS'KA, M.M.;  
KOPKESAK, G.D., redaktor; MONZHEWAN V.F., tekhnichnyi  
redaktor

[Methods of teaching mathematics; a manual for teachers and students  
in pedagogical schools] Metodyka vykladannia matematyky; posibnyk  
dlia vohyteliv i studentiv pedagogichnykh instytutiv. Za zahal'noiu  
red. S.I. Liapina. Pereklad s druhoho, vypravlenoho rosiis'koho  
vydannia Uchpedhizu, zatverdshenoho Ministerstvom osvity RSFSR.  
Kyiv, Derzh. uchbovo-pedagog. vyd-vo "Radians'ka shkola," 1956.  
467 p. (MIRA 10:2)

(Mathematics--Study and teaching)

LYAPIN, Sergey Yevgen'yevich; GASTEVA, Serafima Alekseyevna; KVASNIKOVA,  
Zinaida Yakovlevna; KRIL'SHTEYN, Boris Il'ich; CHAKHIREV, A.G.,  
redaktor; LEONT'YEVA, L.A., tekhnicheskiy redaktor

[Methods of teaching mathematics; a manual for teachers of mathematics  
in classes 8-10 of the secondary schools] Metodika prepodavaniia  
matematiki; posobie dlia uchitelei matematiki 8-10 klassov srednei  
shkoly. Leningrad, Gos.uchebno-pedagog. izd-vo Ministerstva pro-  
sveshcheniia RSFSR, Leningradskoe otd-nie. Pt.2. 1956. 653 p.

(MIRA 10:2)

(Mathematics--Study and teaching)

GASTEVA, S.V.

③  
Temperature coefficient of thermonarcosis of somatic muscle.  
B. P. Ushakov and S. V. Gasteva (*C. R. Acad. Sci. U.R.S.S.*, 1953,  
88, 1071--1074).—An investigation of the length of time for which a  
no. of cold-blooded vertebrate and invertebrate muscles remain  
excitable in appropriate salt solutions at different controlled temp.  
From the temp. coeff., it is concluded that the loss of excitability  
at high temp. is due to denaturation of muscle proteins.  
G. S. BRINDLEY.

Zoological Institute of the Academy of Sciences USSR and Leningrad State  
University im. A. A. Zhdanov.

GASTEVA, S. V.

GASTEVA, S. V.: "Metabolism of phospholipids, nucleoproteides, and phosphoproteins in the brain in representatives of various classes of vertebrates". Leningrad, 1955. Acad Sci USSR. Inst of Physiology imeni I. P. Pavlov. (Dissertations for the Degree of Candidate of Biological Sciences.)

So: Knizhnaya letonis' No. -9, 3 December 1955. Moscow.

GASTEVA, S. V.

✓ Metabolism of phospholipides and nucleoproteins of the brain in members of various classes of vertebrates. S. V. Gasteva. *Doklady Akad. Nauk S.S.S.R.* 186, 873-6 (1968). —  $^{32}$ P-labeled  $\text{NaH}_2\text{PO}_4$  was used for following the rate of metabolism of phospholipide and nucleoprotein fractions of the brain in carp, perch, frog, turtle, hen, pigeon, white rat, and dog. The greatest rate of renewal of phospholipides was in the birds and lowest in the dog among warm-blooded animals; in cold-blooded animals the max. was in frogs and min. in fish. All warm-blooded animals showed higher renewal rates than did the cold-blooded ones. Generally, the development of the nervous system paralleled the intensity of metabolism. G. M. Kosolapov

Laboratoriya sravnitel'noy biokhimii Instituta fiziologii im. I. P. Pavlova Akademii nauk SSSR. <sup>P</sup>red. Akad. K. M. Bykovym.

GASTEVA, S.V.

226 Early Changes in Phospholipid Metabolism in Some Tissues  
of White Rats Induced by Action of Ionizing Radiation  
TCHISTVRIKOV, D.A. ~~CHETVERIKOV~~ <sup>1</sup> (Moscow) (Symposium)  
GASTEVA, S.V. ~~GASTEVA~~ <sup>2</sup> (Moscow) (Symposium)  
MAKHINOV, V.G. ~~MAKHINOV~~ <sup>3</sup> (Moscow) (Symposium)

The rate of radioactive phosphorus into the lipid fraction of liver, spleen, brain, spinal cord and skeletal muscle of white rats was investigated during the irradiation and during 24 hours after the end of the X- and gamma irradiation.

Total body irradiation of rats with doses of 100, 1000 and 4000 r, causes a marked increase of the relative specific radioactivity of the phospholipid phosphorus in liver and spleen, reaching its maximum during the first two hours after the irradiation. The degree of this increase in both these tissues, as well as its duration in the spleen, is directly dependent on the dose employed. An increase rate of incorporation of the  $^{32}\text{P}$  in phospholipids is also observed in the brain and the spinal cord. However, in these cases the effect is not so distinct, and its dependence on dosage is not known. No essential changes are found in the phospholipid metabolism of the skeletal muscle.

The irradiation of the trunk only leads to a more pronounced increase in the  $^{32}\text{P}$  rate of incorporation in the spleen phospholipids as compared to the local irradiation of the head. This difference is less expressed in the liver. In the brain and the spinal cord the irradiation of both the head and the trunk causes approximately the same effect. The temporary increase in the phospholipid change in the central nervous system may be considered as a reactive one.

It may be concluded that the relative value of the direct or the indirect influence of the ionizing radiation on the phospholipid metabolism in various tissues is different.

Presented at the Ninth International Congress of Radiology, Munich, 23-30 July 1959.

GASTEVA, S.V.; MALINOVSKIY, O.V.; POMAZANSKAYA, L.F.; ULYBINA, I.N.;  
CHETVERIKOVA, D.A.

Effect of ionizing radiation on certain aspects of the phosphorus  
metabolism of the brain. Trudy Inst.fiziol. 8:533-542 '59.

(MIRA 13:5)

1. Laboratoriya radiobiologii (zaveduyushchiy - D.A. Chetverikov)  
Instituta fiziologii im. I.P. Pavlova AN SSSR.  
(PHOSPHORUS METABOLISM) (BRAIN)  
(X RAYS--PHYSIOLOGICAL EFFECT)

17(4)

AUTHORS:

Ushakov, B. P., Gastaya, S. V.

SOV/20-128-3-57/58

TITLE:

A Comparative Cytophysiological Analysis of the Responsiveness of Muscular Fibers to the Action of Potassium Chloride

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 3, pp 638-640 (USSR)

ABSTRACT:

The appearance of a nonexcitability of muscular fibers under the action of fermentative toxins on muscles is determined by one single cause, namely by the interaction of the exchange inhibitor with the muscle proteins (ferments)(Ref 1). Although it really occurs in the final effect, the interaction of all stimulating substances investigated - in contrast with the response to fermentative toxins and some other agents - is mostly complicated by the adaptation process (Ref 5). This reduces the toxic effect of the agent in the range of low intensities of stimulation. The existing parabolic dependence of the n-order

( $V = kC^n$ , Refs 1-3) is only disturbed in the range mentioned. In relatively high concentrations, there is always a range in which this dependence remains untouched. This makes possible a separate quantitative estimation of the responsiveness of muscle

Card 1/3



A Comparative Cytophysiological Analysis of the  
Responsiveness of Muscular Fibers to the Action of Potassium Chloride

SOV/20-128-3-57/58

proteins and of the adaptation process mentioned (Ref 5). The degree of deviation quantitatively characterizes the adaptation process. The experiments were carried out on isolated muscles of 12 animal species: medusae, worms, leeches, holothuriae, snails, crabs, frogs, lizards, and white rats. The authors thank I. P. Suzdal'skaya and A. V. Zhirmunskiy for carrying out some experiments. The point of time of the appearance of nonresponsiveness of the isolated muscle to induction current was determined in KCl-solutions of different concentration. Figure 1 shows the logarithmic diagrams of the dependence of the appearance of nonresponsiveness on the KCl-concentration. Already superficial observation shows that the muscle proteins of vertebrates show a responsiveness to low KCl-concentrations which is by several dozens higher, with a lower threshold, than those of invertebrates. In figure 1, the respective curves are arranged in a series according to the decrease in the constant n. Due to a higher value of this constant in lower invertebrates, their responsiveness rises much faster than that of vertebrates. Therefore, the reverse relation often applies to the range of high KCl-concentrations: the muscle proteins of lower animals

Card 2/3

A Comparative Cytophysiological Analysis of the  
 Responsiveness of Muscular Fibers to the Action of Potassium Chloride

SOV/20-128-3-57/58

are more responsive than those of crustaceae and vertebrates. Hence it appears that, in the course of phylogenesis, the responsiveness of the protein substrata of the muscles increases in the range of low KCl-concentrations while it decreases in the range of high concentrations. Smooth muscles have a higher value of the constant  $n$  than transversely striated muscles (Fig 1) (in agreement with Ref 7). No adaptation could be found in 2 species of maritime worms. In other invertebrates, it is distinctly to be seen, though not so distinctly as in vertebrates. Thus, the cells acquired, in the course of evolution, an active regulating capacity with respect to the amount of response. The appearance of this function in the cellular plane is of principal importance since it distinguishes the response of the cell as a whole from the responsiveness of its protein complex. There are 1 figure and 7 references, 5 of which are Soviet.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova  
 (Leningrad State University imeni A. A. Zhdanov)

PRESENTED: June 1, 1959, by Ye. N. Pavlovskiy, Academician

SUBMITTED: May 25, 1959  
 Card 3/3

GASPEVA, S. V., CHETVERIKOV, D. A., (USSR)

"The Effect of Whole-Body X-Irradiation on the Rate of  
32P Incorporation in the Phospholipid Fraction of  
Certain Rat Tissues."

Report presented at the 5th Int'l. Biochemistry Congress,  
Moscow, 10-16 Aug 1961.

34830

S/020/62/142/005/022/022  
B144/B138

27.12.20

AUTHORS: Gasteva, S. V., and Chetverikov, D. A

TITLE: Intensity of phospholipid metabolism (PLM) in the central nervous system (CNS) of rats in acute radiation disease

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 142, no. 5, 1962, 1180 - 1183

TEXT: PLM was studied in brain, spinal chord, liver, and spleen of rats after 750 r whole-body x-irradiation with a PYM-11 (RUM-11) apparatus. This dose caused ~70% of deaths within 4 days. PLM was judged from the rate of  $\text{Na}_2\text{HP}^{32}\text{O}_4$  incorporation into PL fractions (introduction 0.5  $\mu\text{cu}/1 \text{ g}$  of weight). The rats were decapitated 120 min after  $\text{P}^{32}$  application; irradiation time was 100 min. The rats were in nine groups (112 rats) with  $\text{P}^{32}$  application 10 min before, and 2, 4, 6, 12, 24, 48, 72, and 96 hrs after, irradiation, with a nonirradiated control group of 57 rats. The specific radioactivity (s.r.) of anorganic P (AP), the s.r. of the total PL fraction (imp/min  $\cdot \mu\text{g}$  P), and the relative s.r. (r.s.r.) of Card 1/3

S/020/62/142/005/022/022  
B144/B138

Intensity of phospholipid metabolism ...

PL phosphorus ( $\frac{s.r.PL}{s.r.AP} \cdot 100$ ) were calculated, and from this the rate of  $p^{32}$  incorporation into this fraction and the PLM intensity could be ascertained. Fig. 1 shows the PL r.s.r. in different tissues. Previous investigations had led the authors to assume a remote mechanism controlling PLM intensity alone (CNS) or in conjunction with direct effects (spleen, liver) in the first stage of radiation disease. The initial temporary PLM increase observed in all the tissues studied is apparently an unspecific metabolic reaction which is followed by widely differing specific reactions, depending on morphological and physiological features. No direct noxious effect was found on the biochemical systems responsible for PL synthesis in CNS, liver, and spleen. There are 1 figure and 15 references: 8 Soviet and 7 non-Soviet. The four most recent references to English-language publications read as follows: R. M. C. Dawson, D. Richter, Proc. Roy. Soc., London. 137, 252 (1950); F. G. Sherman, A. B. Almeida, Adv. in Radiobiol., Stockholm. 49 (1957); W. E. Cornatzer, J. P. Davison et al., Radiation Res. 1, 546 (1954); H. Harrington, P. S. Lavik, J. Cell. Comp. Physiol. 46, no. 1, 503 (1955).

Card 2/3

Intensity of phospholipid metabolism ...

S/020/62/142/005/022/022  
B144/B138

ASSOCIATION: Institut fiziologii im. I. P. Pavlova Akademii nauk SSSR  
(Institute of Physiology imeni I. P. Pavlov of the Academy  
of Sciences USSR)

PRESENTED: September 4, 1961, by V. N. Chernigovskiy, Academician

SUBMITTED: August 29, 1961

Fig. 1. Change in PL r.s.r. in cerebral hemispheres (1), spinal chord (2), liver (3), and spleen (4) of rats in the course of radiation disease. The statistical deviation of the points plotted from the control average (= 100 %) is significant ( $P < 0.05$ ). Legend: (a) hours.

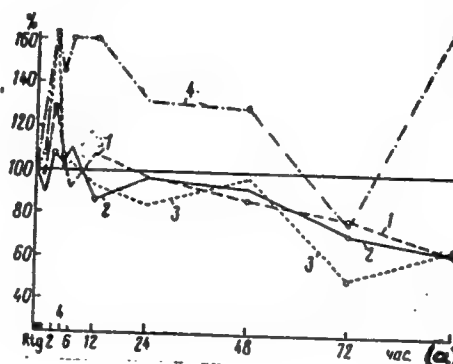


Fig. 1

Card 3/3

GASTEVA, S. V.

(c)  
The Permeability of the Blood-Brain Barrier and the Intensity of Phospholipid Turnover  
in the Central Nervous System of Rats During Acute Radiation Sickness

D. A. Chetverikov and S. V. Gasteva

The purpose of this work was the comparison of the changes of blood-brain barrier permeability for the orthophosphate with those of phospholipid turnover intensity in the tissues of rat central nervous system in the course of acute radiation sickness.

Adult male rats (Wistar strain) received 750 r total-body X-irradiation. The penetration rate of orthophosphate from the blood plasma into brain and spinal cord and the incorporation rate of tissue inorganic phosphate into the phospholipid fraction was studied by means of  $\text{Na}_2\text{H}^{32}\text{PO}_4$  injected subcutaneously to the animals 2 hr before decapitation. Both aspects of phosphorus metabolism were studied in the course of irradiation and 2, 4, 6, 12, 48, 72 and 96 hr after.

Both in brain and spinal cord during the first 2 hr after irradiation, there was some increase of the  $^{32}\text{P}$  penetration rate from blood into the tissues and of the phospholipid turnover rate. Apparently, this transitory reaction is non-specific and is conditioned by the influence of the general regulatory systems of the organism.

In the later part of the radiation disease, the rate of  $^{32}\text{P}$  penetration into the central nervous system tissues decreases in comparison with control values. The intensity of phospholipid metabolism also decreases, but remains near the control level. A marked decrease of both processes studied is observed at the terminal stage of acute radiation sickness (72-96 hr after irradiation).

The similarity of the patterns of changes of blood-brain barrier permeability for orthophosphate and of phospholipid turnover intensity revealed during the course of radiation sickness is probably not accidental, but indicates the existence of some close linkage between these two aspects of the nervous tissue phosphorus metabolism.

*Pathological Laboratory, I. P. Pavlov Institute of Physiology, Academy of Sciences, Leningrad, USSR*

report presented at the 2nd Intl. Congress of Radiation Research,  
Burrington/Yorkshire, Gt. Brit. 5-11 Aug 1962

GASTEVA, S.V.; CHETVERIKOV, D.A.

Intensity of phospholipid metabolism in the central nervous system  
of rats during acute radiation sickness. Dokl. AN SSSR 142  
no.5:1180-1183 F '62. (MIRA 15:2)

1. Institut fiziologii im. I.P.Pavlova AN SSSR. Predstavleno  
akademikom V.N.Chernigovskim.

(PHOSPHATIDES)  
(NERVOUS SYSTEM)  
(RADIATION SICKNESS)



ACCESSION NR: AT3013148

S/3018/63/000/000/0597/0606

AUTHOR: Gasteva, S. V.; Chetverikov, D. A.

TITLE: Phosphate group phospholipide metabolism in brains of rats during acute radiation sickness

SOURCE: Tret'ya Vsesoyuznaya konferentsiya po biokhimi i nervnoy sistemy\*. Sbornik dokladov. Yerevan, 1963, 597-606

TOPIC TAGS: phosphate group phospholipide metabolism, brain metabolism, phospholipide metabolism, CNS functional level, acute radiation sickness, X-irradiation, radioactive phosphorus, hematoencephalitic barrier permeability, lipid fraction, inorganic phosphate fraction, specific radioactivity, brain large hemispheres, spinal cord

ABSTRACT: Experimental white male rats were X-irradiated with a single total 750 r dose (RUM-11 unit, 176 kv, 20 ma, focal length 91 cm). Radioactive phosphorus ( $P^{32}$ ) in the form of  $Na_2HP^{32}O_4$  was injected subcutaneously (5 mc/kg) into animals to determine phosphate group phospholipide metabolism intensity and to determine change in hematoencephalitic barrier permeability for inorganic

Card 1/3

ACCESSION NR: AT3013148

phosphate in the blood plasma passing into brain tissue. Animals were decapitated 2 hrs after  $P^{32}$  injection and blood and brain samples were taken. Brain large homispheres and spinal cord were carefully removed and lipids extracted by Folch's chloroform-methanol method. Inorganic phosphate fractions were precipitated by Delori's method. Specific radioactivity of lipid and inorganic phosphate fractions and blood plasma served as indices of phospholipide metabolism intensity and hematoencephalitic barrier permeability. Experimental data of this study were compared with literature data on CNS changes in irradiated animals. A striking correlation was found between CNS functional level and phospholipide metabolism. With increase in CNS functional level in the first hours after irradiation, the activity of certain metabolic systems in the brain, including phospholipide metabolism, become more intense. Hematoencephalitic barrier permeability increases for substances necessary for more intense metabolism and this is reflected by the change in inorganic phosphate specific radioactivity of the brain. Despite a close correlation there is not sufficient evidence to claim that phospholipide metabolism is more directly related to CNS vital functions than other types. The problem of which metabolic processes are of prime chemical importance in brain activity and

Card 2/3

ACCESSION NR: AT3013148

which processes play supplementary roles is a key question of functional biochemistry and requires further study. Orig. art. has: 2 figures.

ASSOCIATION: Institut.fiziologii im. I. P. Pavlova, AN SSSR, Leningrad (Physiology Institute, AN SSSR)

SUBMITTED: 00

DATE ACQ: 28Oct63

ENCL: 00

SUB CODE: AM

NO REF SOV: 033

OTHER: 007

Card 3/3

L 14346-63

EWI(1)/EWI(m)/ES(b)/BDS AFPTC/ASD AR/K

ACCESSION NR: AP3003866

S/0020/63/151/003/0718/0721

AUTHORS: Chetverikov, E. A.; Gasteva, S. V.

56  
55

TITLE: Permeability of the blood-brain barrier to inorganic phosphate in acute radiation sickness 19

SOURCE: AN SSSR. Doklady\*, v. 151, no. 3, 1963, 718-721

TOPIC TAGS: permeability, blood-brain barrier, inorganic phosphate, radiation sickness, phospholipid metabolism

ABSTRACT: Having previously studied the rate of incorporation of radioactive phosphate into brain phospholipids, the authors wished to study the effect of irradiation on the rate of synthesis. Permeability was assessed in terms of the rate of uptake of labelled inorganic phosphate from the blood plasma by the tissue of the cerebral hemispheres, using relative specific radioactivity of cerebral and cerebrospinal tissue (ratio of specific brain to plasma radioactivity) as the measure. White rats were subjected to whole-body irradiation in a dosage which produces acute radiation sickness and is fatal to 70% of the animals in 4 days (750 r in 10 minutes). Radioactive phosphate (Na sub 2 HP sup 32 O sub 4) was injected s.c. in the amount of 0.5 micrograms Cu/g, and 2 hours afterwards the animals were decapitated and blood samples collected. Determinations were made  
Card 1/32

L 14346-63  
ACCESSION NR: AP3003866

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immediately after irradiation and 2-96 hours later. Relative radioactivity of the plasma was appreciably decreased immediately after irradiation and in the first 6 hours, then rose sharply and was considerably above the normal level at 24, 72, and 96 hours. The findings in cerebrospinal and hemispheric tissue were very similar: no change for the first 6 hours after irradiation, and a slight reduction beginning at 12 hours. Changes in the relative specific radioactivity of hemispheric and cerebrospinal radioactivity were triphasic: there was a distinct increase in permeability in the first 2 hours, a levelling off at values close to those in controls in the first 2 days, and finally, on the 3rd to 4th day a statistically significant decrease. The initial decrease in the specific radioactivity of plasma inorganic phosphate is due to its dilution with less active tissue phosphate, the high level in the terminal stage of radiation sickness to the decreased permeability of the blood-brain barrier. The latter phenomenon is explained by the increased capacity of the brain cell cytoplasm to absorb inorganic phosphate resulting from the irradiation-induced lowering of the rate of phospholipid metabolism in the brain tissue. Thus the rate of metabolic processes in the brain and the permeability of the blood-brain barrier are intimately related. Orig. art. has: 2 figures.

Card

2/32

*Inst. of Physiology of the Academy of Sciences*

CHETVERIKOV, D.A.; GASTEVA, Svetlana V.; IVANOV, K.P.; VACEK, A.;  
POSPISIL, M.

Mechanism of raised resistance of rats to hypoxia in acute  
radiation injury. Folia biol. (Praha) 10 no.5:386-391 '64.

1. Pavlov Institut of Physiology, Academy of Sciences of the  
U.S.S.R., Leningrad, and Institute of Biophysics, Czechoslovak  
Academy of Sciences, Brno.

L 16070-65 EWG(j)/EWG(r)/EWT(1)/FS(v)-3/EWG(v)/EWG(a)/EWG(c) Pb-4/Pe-5/  
Pb-4/Pa-4 AEDC(a)/ASD(a)-5/AMD/AFMD/AFTC(b) DD

ACCESSION NR: AP4049493

S/0020/64/159/002/0469/0472

AUTHOR: Chatverikov, D. A.; Gasteva, S. V. B

TITLE: The metabolism of phosphate groups in phospholipids of the brain and liver of rats during hypoxia and posthypoxia

SOURCE: AN SSSR. Doklady\*, v. 159, no. 2, 1964, 469-472

TOPIC TAGS: hypoxia, pressure chamber, phosphate metabolism, phospholipid, brain, liver

ABSTRACT: In this study, three groups of rats were placed in pressure chambers with the atmospheric pressure lowered as follows: group 1 - 240 mm Hg; group 2 - 180 mm Hg; group 3 - 240 mm Hg (chamber heated to reduce hypothermia). Periodically the animals received injections containing  $P^{32}$ , the inclusion rate of which indicated that in group 1, and in group 2 particularly, the metabolism of phospholipids was depressed. Group 3 showed a 50% mortality rate, with the  $P^{32}$  inclusion rates not deviating significantly from those of a control group. In all instances, the metabolism of phospholipids was inhibited more

Card 1/2

L 16070-65

ACCESSION NR: AP4049493

scutely in the brain than in the liver. It is concluded that the inhibition of phospholipid metabolism during hypoxia was to a certain extent determined by a concomitant onset of hypothermia. Orig. art. has: 1 table.

ASSOCIATION: Institut fiziologii imeni I. P. Pavlova Akademii nauk SSSR (Institute of Physiology of the Academy of Sciences, SSSR)

SUBMITTED: 07Apr64

ENCL: 00

SUB CODE: PH, LS

NO REF SOV: 005

OTHER: 009

ATD PRESS: 3145

Card 2/2



L 14293-66 EWT(m)/EPF(n)-2 DIAAP GG/RD

ACC NR: AT6003877

SOURCE CODE: UR/2865/65/004/000/0437/0444

AUTHOR: Gasteva, S. V.; Ivanov, K. P.; Chetverikov, D. A.

ORG: none

TITLE: Resistance of rats to severe oxygen deficiency during radiation sickness 19, 44, 55 50 24/

SOURCE: AN SSSR. Otdeleniye biologicheskikh nauk. Problemy kosmicheskoy biologii, v. 4, 1965, 437-444

TOPIC TAGS: radiation sickness, hypoxia, rat, biologic metabolism, test chamber, ionizing radiation, x ray irradiation, tissue physiology

ABSTRACT: Experiments were conducted to determine the effect of ionizing radiation on oxidizing systems in living tissues by showing whether the resistance of rats to acute hypoxia changes in the course of severe radiation sickness. Male white rats weighing 200—250 g were subjected to a dose of x-rays (750 r) sufficient to cause mass death 80 hours after irradiation. Immediately after irradiation, and then at intervals of 3, 6, 12, 24, 48, 72, and 96 hours, groups of experimental and control rats were placed in an altitude chamber and subjected to rarefied atmosphere

Card 1/3

2

L 14293-66

ACC NR: AT6003877

(140 mm Hg). The resistance of irradiated rats to hypoxia, evident 6 hours after irradiation, was most pronounced after 72 hours. In order to determine whether a decrease in the intensity of metabolic processes is the chief cause of resistance to hypoxia, the rectal temperature and oxygen consumption of irradiated rats were measured in the designated time intervals. The absence of essential changes in these indices showed that the decrease in the intensity of metabolic processes in irradiated rats is not the sole cause of increased resistance to hypoxia.

Another series of experiments tested oxygen consumption of animals directly under hypoxic conditions. Gas-exchange studies under normal atmospheric and hypoxic conditions were compared, and it was concluded that the mechanism of increased resistance to hypoxia is different at different stages of radiation sickness. Further research is needed to determine the exact causes of increased resistance at different times, which may include hypothermia, disturbances of normal vital activity such as anemia or circulatory disruption, and disturbances in temperature regulation. The observed resistance of rats to acute oxygen deficiency (from 6 hours after irradiation to the terminal stage of acute radiation sickness),

Card 2/3

L 14293-66

ACC NR: AT6003877

and also the absence of a significant change in the intensity of metabolic processes, indicate that ionizing radiation, in the dose used, does not damage oxidizing systems in the tissues. Orig. art. has: 3 figures.  
[ATD PRESS: 4091-P]

SUB CODE: 06 / SUBM DATE: none / ORIG REF: 008 / OTH REF: 008

CC  
Card 3/3

ACC NR1 AP5028918

DD

SOURCE CODE: UR/0020/65/165/003/0714/0715

AUTHOR: Gasteva, S. V.; Chetverikov, D. A.

ORG: Institute of Physiology im. I. P. Pavlov, Academy of Sciences SSSR (Institut fiziologii, Akademii nauk SSSR) 31 B

TITLE: Reasons for the decrease in metabolic intensity of brain phospholipids during oxygen starvation of the organism

SOURCE: AN SSSR. Doklady, v. 165, no. 3, 1965, 714-716

TOPIC TAGS: animal physiology, biologic metabolism, brain, phospholipid, rat

ABSTRACT: Previous experiments had suggested that the suppression of phospholipid synthesis observed in brain tissue during hypoxia is less the result of oxygen starvation of the organism than of the hypothermia which accompanies this state. To verify this hypothesis, phospholipid synthesis in animals during intensified hypothermia and "normal" hypoxia was compared. Male white rats were immersed in water (8-10C), injected with radioactive phosphate (dose 0.5  $\mu$  Cu/g), and then placed, while in restraint cages, in a pressure chamber at 240 mm Hg for 110 min. The relative specific radioactivity (RSR) of the phosphorus in the phospholipids was used as an index of the intensity of phospholipid metabolism. Experimental results showed that in artificially cooled animals (whose rectal temperature was 13.3C below normal), the RSR was 35.5% of the control value. For animals not subjected to additional cooling (rectal temperature 5.2C below normal), the RSR of brain phospholipids was 69% of the control value.

UDC: 577.1:547.953

Card 1/2

I. 9511-66

ACC NR: AP5028918

control. An explanation of the complex relationship between decreased body temperature and depressed phospholipid synthesis is proposed. It is suggested that hypothermia of brain tissue inhibits the activity of enzyme systems involved in cellular synthesis processes. Hypothermia accompanying oxygen starvation of the organism seems to have a protective, adaptive character. When the normal body temperature of experimental animals was artificially maintained during hypoxia, a higher mortality rate was observed. Orig. art. has: 2 figures. [JS]

SUB CODE: LS/ SUBM DATE: 25Nov64/ ORIG REF: 005/ OTH REF: 001/ ATD PRESS:

4/57

Card

2/2

Gasteva, O. V.

Rapid gravimetric method for determination of total alkali oxides in silicon-aluminum-calcium-magnesium-sodium-potassium glass as well as in glasses containing in addition of boron, fluorine, barium, and manganese, and in feldspar minerals. O. V. Krasnovskii, E. P. Bil'tyukova, and O. V. Gasteva. Nauch.-Tekh. Inform. Byull. Vsesoyuz. Nauch.-Issled. Inst. Stikla 1953, No. 5, 10-21; Referat. Zhur., Khim. 1953, No. 2282. —To det. alkali oxides in glasses and silicates contg. large amts. of  $Al_2O_3$ , treat a 0.5-g. sample with a mixt. of 40% HF and concd.  $H_2SO_4$  while heating to remove Si, F, and B as volatile fluorides, heat the resulting sulfates at 700-800°, treat the sulfates with water, and ppt. all metals except the alkali with a satd. aq.-alc. soln. of  $(NH_4)_2CO_3$ . Det. the alkali metals remaining in soln. by any accepted method. This procedure is applicable to macro- as well as microdetn. In the former case, detn. takes 11-12 hrs. which is half the time required by the sulfate-baryte method, and by the semimicromethod it takes only 7 hrs.

M. Hosh

pm

DEMBO, A.G.; GASTEVA, Z.A.

New method of determination of alveolar air. Ter. arkh., Moskva 24  
no.1:92-95 Jan-Feb 52. (CML 21:4)

1. Of the Faculty Therapeutic Clinic (Acting Director--Prof. T.S.  
Istamanova), First Leningrad Medical Institute imeni Academician I.P.  
Pavlov.

GASTVA, Z. A.

~~Excerpt from the document~~

Study on function of the respiratory apparatus in chronic pulmonary emphysema. Klin. med., Moskva 30 no.4:86-87 Apr 1952.

(CML 22:2)

1. Of the Faculty Therapeutic Clinic (Acting Director -- Prof. T. S. Istamanova), First Leningrad Medical Institute imeni Academician I. P. Pavlov).



GASTEVA, Z.A.

Characteristics of hemopoiesis in patients with congenital cardiac defects of the blue type. Terap.arkh. 33 no.1:79-84 '61. (MIRA 14:3)

1. Iz fakul'tetskoy terapevticheskoy kliniki (zav. kafedroy - prof. T.S. Istamanova) I Leningradskogo meditsinskogo instituta imeni I.P. Pavlova.

(HEART--ABNORMALITIES AND DEFORMITIES) (HEMOPOIETIC SYSTEM)

.GASTEVA, Zinaida Alekseyevna; KLIMOV, S.P., red.; LEBEDEVA, G.T.,  
tekhn. red.

[Pain in the heart] O boliakh v serdtse. Leningrad, Medgiz,  
1963. 15 p. (MIRA 16:7)  
(HEART--DISEASES) (PAIN)

GASTEVA, Zinaida Alekseyevna; NESHEL', Yelizaveta Vasil'yevna  
[deceased]; USPEŠSKAYA, Veronika Gennad'yevna; LUK'YE,  
M.A., red.

[Pneumofibrosis and pulmonary emphysema] Pnevmo-fibrozy i  
emfizema legkikh. Leningrad, Meditsina, 1965. 206 p.  
(MIKA 18:9)

GASTILA, L. I., engr

PA167T77

USSR/Metals - Welding

Sep 50

"Resistance of the Plate in Spot Welding," L. I. Gastila, Engr, Kaunas State U

"Avtogen Delo" No 9, pp 17-18

Introduces formula for calculating ohmic resistance of a plate. Formula gives relation between resistance and basic parameters, such as specific resistance of metal of plate, its thickness, and area through which a welding current flows. This permits graphic or analytical determination of coefficient values necessary to calculate resistance.

167T77

6183-1218 1/1

Translation from: Referativnyy Zhurnal, Elektrotekhnika, 1957, 112-2-3645  
Nr 2, p. 164 (USSR)

AUTHOR: Gastila, L.

TITLE: Plate Resistance (Laksto omine varza; aktivnoye soprotivleniye plastinki) [In Lithuanian, resume in Russian]

PERIODICAL: Kauno politechn. inst. darbai, Tr. Kaunassk. politekhn. in-ta, 1955, Nr 3, pp. 127-135

ABSTRACT: An analytical calculation for determining plate resistance in spot welding is given. The inadequacy of the formula proposed by Helman, which takes into account the effect of the current field in the plate is pointed out. A simplified method of plotting electric fields is proposed which will make it possible to derive the formula expressing the relation between the thickness of the plate and the diameter of the electrode with the least error:  
 $R = K \rho \delta / d^2$ , where  $\rho$  is the resistivity of the metal plate;  $\delta$  is the thickness of the plate;  $d$  is the diameter of the electrode;  $K$  is a coefficient which is a function

Card 1/2

Plate Resistance (Cont.)

112-2-3645

of the ratio  $d/\delta$  . The values for K are obtained from the  
graphs which are given, or analytically;  $K = 1.274 - 0.96/1.54$   
 $d/\delta$  .

Card 2/2

G.K.Ts.

GASTILA, L.I., red.

[Mechanization of drainage work] Voprosy mekhanizatsii i me-  
liorativnykh rabot; sbornik statei. Vil'nius, Gos. izd-vo  
polit. i nauchn. lit-ry, 1956. 130 p. (MIRA 16:1)  
(Drainage)

L 52118-65

ACCESSION NR: AP5015366

UR/0286/65/000/009/0115/0115  
621.9.018

6  
B

AUTHOR: Gastila, L. I.

TITLE: A method for making small diameter channels with complex configuration in cast and stamped parts. Class 49, No. 170830

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 9, 1965, 115

TOPIC TAGS: machine tool industry, metal forming

ABSTRACT: This Author's Certificate introduces a method for machining materials using the pressure produced by evaporating current-carrying elements, e.g. in the form of a wire bent to conform in shape to a predetermined profile. The elements are evaporated by a pulse charge for making small diameter channels with complex configuration in cast and stamped parts.

ASSOCIATION: none

SUBMITTED: 23Dec63

ENCL: 00

SUB CODE: IE

NO REF SOV: 000

OTHER: 000

Card 1/1 *mb*



GASTILA, L.

Lithuanian racing tracks are waiting for racers. Za rul. 19 no. 2:16  
F '61. (MIRA 14:4)

1. Zaveduyushchiy kafedroy avtomobiley Kaunasskogo Politekhnikheskogo  
instituta.

(Lithuania—Automobile racing)

GASTILA, L., kand. tekhn. nauk, dotsent

Training specialists. Avt. transp. 41 no.12:41-42 D '63.  
(MIRA 17:1)

1. Zaveduyushchiy kafedroy avtomobiley Kaunasskogo politekhnicheskogo instituta (for Gastila). 2. Nachal'nik Tyumenskogo avtouppravleniya (for Avtokrator).

GASTILOVICH, A.

Iz opyta nastupatel'nykh deistvii na gornom teatre. (Voennaia  
mysl', 1946, no. 6, p. 16-28, maps)

Title tr.: Experience in offensive operations in mountain  
terrain.

Uk. V82 1946

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of  
Congress, 1955.

SOKOLOVSKIY, V.D., Marshal Sovetskogo Soyuza; BELAYEV, A.I., polkovnik;  
GASTILOVICH, A.I., doktor voyennykh nauk, prof. general-polkovnik;  
DENISENKO, V.K., polkovnik; ZAV'YALOV, I.G., general-mayor;  
KOLECHITSKIY, V.V., general-mayor; LARIONOV, V.V., kand. voyennykh  
nauk, polkovnik; MYRKOV, G.M., polkovnik; PAROT'KIN, I.V., kand.  
voyennykh nauk, polkovnik; PROKHOROV, A.A., general-mayor; POPOV, A.S.,  
polkovnik; SAL'NIKOV, K.I., polkovnik; SHIMANSKIY, A.N., polkovnik;  
CHEREDNICHENKO, M.I., general-mayor; SHCHEGOLEV, A.I., polkovnik;  
MOROZOV, B.N., polkovnik, red.; KONOVALOVA, Ye.K., tekhn. red.

[Military strategy] Voennaya strategiya. Moskva, Voenizdat, 1962.  
457 p. (MIRA 15:7)

(Strategy)

SOKOLOVSKIY, V.D., Marshal Sovetskogo Soyuz; BELIAYEV, A.I., polkovnik;  
GASTILOVICH, A.I., doktor voyennykh nauk, prof. general-  
polkovnik; DENISENKO, V.K., polkovnik; ZAV'YALOV, I.G.,  
general-mayor; KOLECHITSKIY, V.V., general-mayor; LARIONOV,  
V.V., kand. voyennykh nauk polkovnik; NIRKOV, G.M., polkov-  
nik; PAROT'KIN, I.V., kand. voyennykh nauk polkovnik;  
PROKHOROV, A.A., general-mayor; POPOV, A.S., polkovnik;  
SAL'NIKOV, K.I., polkovnik; SHIMANSKIY, A.N., polkovnik;  
CHEREDNICHENKO, M.I., general-mayor; SHCHEGOLEV, A.I., pol-  
kovnik; MOROZOV, B.N., polkovnik, red.; KONOVALOVA, Ye.K.,  
tekhn. red.

[Military strategy] Voennaya strategiya; Izd.2., ispr. 1 dop.  
Moskva, Voenizdat, 1963. 503 p. (MIRA 16:10)  
(Strategy)

GASTILOVICH, Ye.A.; SHIGORIN, D.N.; GRACHEVA, Ye.P.; CHEKULAYEVA, I.A.;  
SHOSTAKOVSKIY, M.F.

Investigating the nature of the complexes and derivatives of  
acetylene by the method of infrared absorption spectra. Opt.i  
spektr. 10 no.5:595-599 My '61. (MIRA 14:8)  
(Acetylene—Spectra)

GASTILOVICH, Ye.A.; SHIGORIN, I.N.; KOMAROV, N.V.

Use of the method of infrared absorption spectra in studying acetylene derivatives containing elements of group IV of Mendeleev's periodic law. Opt. i spektr. 16 no.1:46-51 Ja '64. (MIRA 17:3)

GASTILOVICH, Ye.A.; SHIGORIN, D.N.; KOMAROV, N.V.; YAROSH, O.G.

Electro-optical parameters of the C--Ge, C--H, C--Si  
bonds of certain acetylene derivatives consisting of one or  
several acetylene groups. Opt. i spektr. 19 no.2:287-289 Ag '65.  
(MIRA 18:8)



L 33155-66 EWT(m)/EWP(j) RM

ACC NR: AR6016177

SOURCE CODE: UR/0058/65/000/011/DO14/DO14

AUTHOR: Shigorin, D. N.; Gastilovich, Ye. A.; Komarov, N. V.

TITLE: Investigation of compounds of the group  $(CH_3)_3-X-C\equiv CH$ , where  $X = C, Si, Sn$ , and  $Pb$  in the region of valence oscillations of the groups  $C-C$  and  $C-H$

SOURCE: Ref. zh. Fizika, Abs. 11D97

REF SOURCE: Tr. Komis. po spektroskopii. AN SSSR., t. 3, vy2. 1, 1964, 673-678

TOPIC TAGS: absorption band, ir spectrum, complex molecule, molecular physics, molecular interaction

ABSTRACT: The frequencies of the valence oscillation groups  $C\equiv C$  and  $\equiv C-H$  in compounds  $(CH_3)_3-X-C\equiv CH$  were calculated. The calculated frequencies are compared with the measured frequencies in ir spectra of the compounds  $(CH_3)_3-C-C\equiv CH$  (I),  $(CH_3)_3-Si-C\equiv CH$  (II), and  $(C_2H_5)_3-Sn-C\equiv CH$  (III). It is concluded that in compounds with  $Si, Ge, Sn$ , and  $Pb$  there should be observed an intramolecular interaction with participation of the  $\pi$ -electrons of the  $C\equiv C$  bond, using the d-orbit of the  $X$  atom. The presence of such an interaction is confirmed experimentally by the fact that an increase is observed in the intensity of the absorption band of the group  $C\equiv C$  in II and in III compared with I, and that compounds II and III form stronger complexes with an electro-donor solvent:  $(CH_3)_3-X-C\equiv CH \cdots Y-R$ . [Translation of abstract]

SUB CODE: 07, 20

LS  
Card 1/1

GASTING, N. [L.]

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42  
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z AA AB AC AD AE AF AG AH AI AJ AK AL AM AN AO AP AQ AR AS AT AU AV AW AX AY AZ BA BB BC BD BE BF BG BH BI BJ BK BL BM BN BO BP BQ BR BS BT BU BV BW BX BY BZ CA CB CC CD CE CF CG CH CI CJ CK CL CM CN CO CP CQ CR CS CT CU CV CW CX CY CZ DA DB DC DD DE DF DG DH DI DJ DK DL DM DN DO DP DQ DR DS DT DU DV DW DX DY DZ EA EB EC ED EE EF EG EH EI EJ EK EL EM EN EO EP EQ ER ES ET EU EV EW EX EY EZ FA FB FC FD FE FF FG FH FI FJ FK FL FM FN FO FP FQ FR FS FT FU FV FW FX FY FZ GA GB GC GD GE GF GG GH GI GJ GK GL GM GN GO GP GQ GR GS GT GU GV GW GX GY GZ HA HB HC HD HE HF HG HH HI HJ HK HL HM HN HO HP HQ HR HS HT HU HV HW HX HY HZ IA IB IC ID IE IF IG IH II IJ IK IL IM IN IO IP IQ IR IS IT IU IV IW IX IY IZ JA JB JC JD JE JF JG JH JI JJ JK JL JM JN JO JP JQ JR JS JT JU JV JW JX JY JZ KA KB KC KD KE KF KG KH KI KJ KL KM KN KO KP KQ KR KS KT KU KV KW KX KY KZ LA LB LC LD LE LF LG LH LI LJ LK LM LN LO LP LQ LR LS LT LU LV LW LX LY LZ MA MB MC MD ME MF MG MH MI MJ MK ML MN MO MP MQ MR MS MT MU MV MW MX MY MZ NA NB NC ND NE NF NG NH NI NJ NK NL NO NP NQ NR NS NT NU NV NW NX NY NZ OA OB OC OD OE OF OG OH OI OJ OK OL OM ON OO OP OQ OR OS OT OU OV OW OX OY OZ PA PB PC PD PE PF PG PH PI PJ PK PL PM PN PO PP PQ PR PS PT PU PV PW PX PY PZ QA QB QC QD QE QF QG QH QI QJ QK QL QM QN QO QQ QR QS QT QU QV QW QX QY QZ RA RB RC RD RE RF RG RH RI RJ RK RL RM RN RO RP RQ RR RS RT RU RV RW RX RY RZ SA SB SC SD SE SF SG SH SI SJ SK SL SM SN SO SP SQ SR SS ST SU SV SW SX SY SZ TA TB TC TD TE TF TG TH TI TJ TK TL TM TN TO TP TQ TR TS TT TU TV TW TX TY TZ UA UB UC UD UE UF UG UH UI UJ UK UL UM UN UO UP UQ UR US UT UY UZ VA VB VC VD VE VF VG VH VI VJ VK VL VM VN VO VP VQ VR VS VT VY VZ WA WB WC WD WE WF WG WH WI WJ WK WL WM WN WO WP WQ WR WS WT WY WZ XA XB XC XD XE XF XG XH XI XJ XK XL XM XN XO XP XQ XR XS XT XU XV XW XX XY XZ YA YB YC YD YE YF YG YH YI YJ YK YL YM YN YO YP YQ YR YS YT YU YV YW YX YY YZ ZA ZB ZC ZD ZE ZF ZG ZH ZI ZJ ZK ZL ZM ZN ZO ZP ZQ ZR ZS ZT ZU ZV ZW ZX ZY ZZ

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

Internal photoeffect in deformed crystals due to ultra-violet irradiation. N. Gasting and V. Poddubn'yi. *J. Exptl. Theoret. Phys. (U. S. S. R.)* 9, 467, 8(1959). From their exptl. data, G. and P. conclude that in deformed crystals the electrons are held more firmly not only in the  $F$  and  $F'$  but also in the deeper  $U''$  levels. The  $U''$ , like the  $F'$  level, seems to be related to a destruction of the crystal lattice. The greater the crystal deformation, the stronger is the increase of the reverse photocurrent under the action of ultraviolet irradiation. Cf. also Poddubn'yi, *C. A. 33*, 4866<sup>9</sup>, 5287<sup>4</sup>; Fedeney, *C. A. 33*, 5287<sup>3</sup>. P. H. Rathmann

Siberian Physico-Tech. Inst., Tomsk St. Univ.

GASTING, N. L.

GASTING, N. L. — "The Attenuation of the After-Illumination of the Zns-Cu and ZnS-Cu, Co Phosphors Near and in the Region of the Temperature Extinction." Tomsk, 1955. (Dissertation for the Degree of Candidate in Physiomathematical Sciences).

So: Knizhnaya Letopis', No. 8, 1956, pp 97-103

Gast:ng, N. L.

2847

THE DECAY LAWS OF THE AFTERFLOW OF ZINC  
SULFIDE PHOSPHORS IN THE TEMPERATURE  
EXTINCTION REGION. F. I. Vergunov and N. L. Gastling  
(Siberian Physico-Technical Inst., Tomsk State Univ.)  
Soviet Phys. JETP 1, 284-90 (1955) Sept. (in English).  
Zhur. Ekspit. i Teoret. Fiz. 28, 352-60 (1955) Mar.  
(in Russian)

Results are presented of an investigation of the effect of  
temperature and intensity, as well as the length of  
excitation, on the decay law of the afterglow of some zinc  
sulfide phosphors near and in the extinction region. (auth)

①

Gasting, N. L.

51-6-11/25

AUTHOR: Gasting, N. L.

TITLE: Decay of Afterglow of ZnS-Cu and ZnS-Cu,Co Phosphors  
Near and in the Region of Temperature Quenching.  
(Zatukhaniye poslesvecheniya fosforov ZnS-Cu i  
ZnS-Cu,Co vblizi i v oblasti temperaturnogo tusheniya.)

PERIODICAL: Optika i Spektroskopiya, 1957, Vol. III, Nr. 6,  
pp.624-630. (USSR)

ABSTRACT: The paper reports experimental investigation of the  
behaviour of afterglow of ZnS-Cu and ZnS-Cu,Co crystal  
phosphors near and in the region of temperature  
quenching. The purpose of the work was a comparison  
of the obtained results with existing theories, and  
the establishment of a fundamental law of decay of  
afterglow. Afterglow was studied under the conditions  
of steady-state strong, steady-state weak and  
momentary excitation at 365 mμ and at various temper-  
atures. A Pulfrich photometer was used. All  
measurements were made on one sample to exclude the  
effect of secondary factors. The phosphor was a thin  
layer of about 0.003 g/cm<sup>2</sup>. Measurements were begun  
0.7 sec after the excitation had ceased. The decay

Card 1/5

51-6-11/25

Decay of Afterglow of ZnS-Cu and ZnS-Cu,Co Phosphors Near and in the Region of Temperature Quenching.

curves were constructed in double-logarithmic ( $\ln I$ ,  $\ln t$ ) and logarithmic ( $\ln I$ ,  $t$ ) coordinates, where  $I$  = the intensity of afterglow,  $t$  = duration of decay. Results were obtained for ZnS-Cu phosphor with  $10^{-4}$  g/g of Cu. Temperature quenching was studied between 300 and 600°K. The usual quenching curve was obtained: a small rise of intensity (at 290-410°K), constant intensity (at 410-440°K) and a sharp fall (at 440-600°K). The region of constant values of intensity is called the region "near quenching", and the 440-600°K region is called the "quenching region". The following measurements were made: (A) At steady-state weak excitation (Fig.1), when a series of hyperbolae was obtained. (B) At steady-state strong excitation (about 50 times stronger than weak excitation) - see Fig.2. (C) At momentary (0.01 sec) excitation (Fig.3). For the ZnS-Cu,Co phosphor with  $10^{-5}$  g/g of Cu and  $10^{-5}$  g/g of Co the curve of

Card 2/5

51-6-11/25

Decay of Afterglow of ZnS-Cu and ZnS-Cu,Co Phosphors Near and in the Region of Temperature Quenching.

temperature quenching was of special form, first established by Saychenko (Ref.2). This quenching curve had a region of quenching, called region I, at 100-290°K, followed by a region of increased intensity (from room temperature to 420-440°K) which is called region II, and a region of high temperature quenching (440-600°K), called region III. For the regions I and III afterglow was studied under steady-state strong, steady-state weak and momentary (0.2 sec) excitations. For the region II only steady-state strong excitation was used. The results are given in Figs.4 and 5. From the results obtained the author concludes that: (1) With change of intensity and duration of excitation, different laws of decay of after-effect are obtained for one sample in the same region of temperatures. (2) From the curves of afterglow decay the depth of localization levels which cause afterglow was determined: for ZnS-Cu  $\epsilon = 0.64$  eV, for ZnS-Cu,Co  $\epsilon = 0.36$  eV for region I and  $\epsilon = 1.57$  eV for region III. (3) Two different values of the activation energy were found: one for the quenching

Card 3/5

51-6-11/25

Decay of Afterglow of ZnS-Cu and ZnS-Cu,Co Phosphors Near and in the Region of Temperature Quenching.

and another for the region near quenching.

(4) In ZnS-Cu afterglow is due to localization levels of the same depth for the two regions: near, and in the quenching region. In ZnS-Cu,Co in the low-temperature region I shallow levels (0.36 eV) are effective and in the high-temperature region III deep (1.57 eV) levels are active. (5) In both phosphors afterglow follows the laws of the theory of Adirovich as developed by F.I. Vergunas, with temperature quenching of bimolecular type taken into account. (6) Transition of the hyperbolic law of decay of afterglow into the exponential law in the quenching region is due to a decrease in the number of repeated trappings. (7) Neither the exponential nor the hyperbola of II order represent fundamental decay laws, but are simply special cases of the Adirovich decay law supplemented by inclusion of quenching. There are 5 figures, 1 table and 7 references, of which 5 are Russian and 2 English.

Card 4/5



51-6-11/25  
Decay of Afterglow of ZnS-Cu and ZnS-Cu,Co Phosphors Near and in  
the Region of Temperature Quenching.

SUBMITTED: February 11, 1957.

AVAILABLE: Library of Congress.

Card 5/5

Gastings, N.L.

48-4-11/48

SUBJECT: USSR/Luminescence

AUTHOR: Gastings N.L.

TITLE: Decay of Afterglow in ZnS-Cu and ZnS-Cu,Co Phosphors near and in the Region of temperature Quenching (Zatukhaniye posleavecheniya ZnS-Cu- i ZnS-Cu, Co-fosforov vblizi i v oblasti temperaturnogo gasheniya)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1957, Vol 21, #4, pp 508-509 (USSR)

ABSTRACT: Detailed experimental investigations of the afterglow in ZnS-Cu- and ZnS-Cu,Co-phosphors near and in the region of temperature quenching were carried out, and temperature quenching of these phosphors was measured.

The range of temperatures used for quenching was from 300 to 700°K for ZnS-Cu-Phosphors and from 100 to 600°K for ZnS-Cu, Co-phosphors.

Experimental results yield for one and the same phosphor sample all main forms of the afterglow decay law: exponential, hyperbola of the 2nd order and fractional hyperbola, in the same temperature range.

Card 1/2

TITLE:

48-4-11/48  
Decay of Afterglow in ZnS-Cu and ZnS-Cu, Co Phosphors near and  
in the Region of temperature Quenching (Zatukhaniye poslesve-  
cheniya ZnS-Cu- i ZnS-Cu, Co-fosforov vblizi i v oblasti tem-  
peraturnogo gasheniya)

The results obtained agree well with the theoretical Adirovich  
law which was improved by F. Vergunas. The Adirovich-Vergunas  
law, approximated by a fractional hyperbola in the general case,  
includes exponential and second-order-hyperbola laws as par-  
ticular cases.

No references are cited.

INSTITUTION: Tomsk State University

PRESENTED BY:

SUBMITTED: No date indicated

AVAILABLE: At the Library of Congress.

Card 2/2

S/159/62/000/006/027/032  
E073/E535

AUTHORS: Gastings, N.L. and Suvorova, L.A.

TITLE: On the flare up of luminescence of ZnS-Cu phosphors

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika,  
no.6, 1962, 168-169

TEXT: The luminescence flare up was studied for ZnS-Cu phosphors ( $\text{Cu}-10^{-4}$  g/g, calcining temperature  $1100^{\circ}\text{C}$ , flux NaCl) in the temperature extinction range, the beginning of which was at  $415^{\circ}\text{K}$ ; activation energy  $U = 0.67$  eV. The maximum possible intensity of the excitation light was used. Three localization levels (0.12, 0.16 and 0.28 eV) were detected and, therefore, it was possible to compare the results obtained with published ones based on a completely different method of determining the energy depths of the localization levels. These results confirm earlier results of the authors that for the luminescence flare up of ZnS-Cu phosphors the following relation is valid:  $I = I_0(1 - e^{-pt})$ , where  $I_0$  - steady state luminescence intensity,  $I$  - density at the given instant of time  $t$ ,  $p = p_0 \exp(-\epsilon/kT)$ ,  $\epsilon$  - depth of the localization levels.  $p$  expresses the probability of thermal

Card 1/2

On the flare up of luminescence ... S/139/62/000/006/027/032  
E073/E535

release of localized electrons. There are 2 figures.

ASSOCIATION: Novosibirskiy institut inzhenerov zheleznodorozhnogo  
transporta (Novosibirsk Institute of Railway  
Transportation Engineers) ✓

SUBMITTED: November 17, 1961

Card 2/2

GASTO, A.

USSR/Human and Animal Physiology - Nervous System.

V-12

Abs Jour : Ref Zhur - Biol., No 1, 1958, 4459

Author : A. Gasto, A. Yus, F. Morrel, V. Storm-Van-Leuven,  
D. Bekkering, A. Kamp, J. Verre

Inst : -

Title : Electroencephalographic Pattern of the Formation of  
Conditioned Reflexes in Man.

Orig Pub : Zhurnal vyssh. nervn. deyatel'nosti, 1957, 7, No 1, 25-  
38

Abstract : No abstract.

Card 1/1

*GASTO, A.*

USSR, Human and Animal Physiology - Nervous System.

Abs Jour : Ref Zhur - Biol., No 1, 1958, 4460

Author : ~~A. Gasto~~, A. Rozhe, S. Jonzh'ye, A. Pezhi

Inst : -

Title : Study of Electroencephalographic Equivalents in the Processes of Central Excitation and Central Inhibition during the Development of Conditioned Reflexes.

Orig Pub : Zhurnal vyssh. nerv. deyatel'nosti, 1957, 7, No 2, 185-202

Abstract : No abstract.

Card 1/1

GASTOL B. Z Zakładu Higieny U. J., Krakow. Przyczynę do żywienia dzieci szkol no:ważnych województwa krakowskiego w roku 1947. Czese II A second contribution to the nutrition of school-children in the elementary schools in the province of Cracow Przegląd Lekarski, Cracow 1947, 5/11(358-365) Tables 5

So: Medical Microbiology, Section IV, Vol 3, No 1-6



GASTOL, B.; ANSELM, O.; DLUZNIWSKA, K.; WANIEWSKA, D.; Gorczynska, K.

Nutrition of rural population in the Miechow and Mysleniec regions.  
Przegl. lek., Krakow 10 no.6:173-178 1954.

1. Z Zakladu Higieny Akademii Medycznej w Krakowie. Kierownik: Doc.  
dr B.Gastol.

(NUTRITION,

in Poland, rural population)

(RURAL CONDITIONS,

nutrition of rural population in Poland)

GASTOL, Blazej; ANSELM, O.

Nutritional state of the rural populations of the Miechow and  
Mysleniec counties. Przegl. lek., Krakow 10 no.9:255-258 1954.

1. Z Zakladu Higieny Akademii Medycznej w Krakowie. Kierownik:  
Doc. dr B Gastol.

(NUTRITION,

in Poland, of rural population)

(RURAL CONDITIONS,

nutrition of rural population in Poland)

EXCERPTA MEDICA Sec.17 Vol.4/2 Public Health, etc. Tab 58  
*GASTOL, B.*

634. DUST CONCENTRATIONS IN THE ATMOSPHERIC AIR OF CRACOW.  
Zapylenie powietrza atmosferycznego m. Krakowa. Gastoł B., Anselm  
O. and Gorczyńska K. Zakł. Hig. Akad. Med., Kraków. ROCZN.  
PANST. ZAKŁ. HIG. 1956, 7/5 (439-445) Graphs 2 Tables 5

The following results were obtained: (1) The highest dust concentrations are caused by the gas-works and the power-station in the Kazimierz quarter. (2) A high dust concentration was also found in the east- and south-quarter - these being the industrial part of the city. (3) Cracow belongs to the towns of the average high dust concentrations in the atmospheric air. The atmospheric dust pollution is due to the faulty pavements, primitive ways of collection and removal of sweepings and due to the dusty industries.

(-ASTOL B

EXCERPTA MEDICA Sec 17 Vol 5/3 Public Health Mar 59

970. THE INFLUENCE OF THE WORKING CONDITIONS ON THE HEALTH OF WORKERS IN A RUBBER-SHOE FACTORY - Wpływ warunków pracy na zdrowie robotników w powlekarni tekstylu jednej z fabryk obuwia - Gastol B., Dłużniewska K. and Gorczyńska K. Zakł. Hig. A.M., Kraków - MED. PRACY 1958, 9/3 (171-176) Tables 2

Thirty-four workers, exposed to chronic poisoning by benzene, methyl alcohol, acetone and benzine vapours in a rubber-shoe factory were examined. The air analysis showed benzene vapour concentrations ranging from 0.5-1.8 mg./l., methyl alcohol vapours from 0.05-0.18 mg./l., acetone vapours from 0.05-1.7 mg./l and benzine vapours from 1.45-8.0 mg./l. The medical and laboratory examinations of workers showed subjective and objective symptoms of chronic poisoning.

970

The authors suggest that as long as the concentration of toxic substances is beyond the MAC, the working day of exposed workers be shortened.

GASTOL, Blazej.

Relation of iodine to calcium and chemical indices of water  
pollution as related to endemic goiter. Postepy hig.med.dosw. 14  
no.4:413-420 '60.

1. Z Zakladu Higieny A.M. w Krakowie.

(WATER POLLUTION)

(IODINE chem)

(CALCIUM chem)

(GOITER etiol)

S/169/62/000/002/048/072  
D228/D301

AUTHOR: Gastok, B.

TITLE: Atmospheric pollution over the territory of Nowej Huty

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 2, 1962, 60, abstract 2B453 (Roczn. Panstw. zakł. hig., 12, no. 1, 1961, 73-78)

TEXT: Investigations of the atmosphere's pollution were fulfilled in 1958-1959 at 10 points of Nowa Huta. The research program included the determination of: a) The amount of dust settling out of the air upon a horizontal surface, b) the quantity of dust in 1 m<sup>3</sup> of air, c) the amount and size of the dust particles, and d) the concentration of sulfur dioxide in 1 m<sup>3</sup> of air. The results of the investigations are briefly stated and discussed. An estimate is given for the degree of pollution of separate points. [Abstracter's note: Complete translation.]

Card 1/1





GASTOL, Blazej

Studies on the etiopathogenesis of endemic goiter in the Nowosad District. Postepy hig. med. dosw. 16 no.1:167-172 '62.

1. Z Zakladu Higieny AM w Krakowie Kierownik: doc. dr B. Gastol.  
(GOITER etiol)

GASTOL, B.; KOLTER, K.

Level of hemoglobin, number of red cells, and protein in the blood serum as indicators of the state of nutrition of industrial workers. Roczn panstw zaki hig 12 no. 12-181 '63.

1. Institute of Hygiene, School of Medicine, Krakow, and City Dispensary of Industrial Hygiene, Krakow.

GASTOL, Blazej; HOLOWIECKA, Ewa; KOLTEK, Krystyna

Studies on the physical development of children and adolescents  
in children's homes in the Cracov Region. Folia med. Cracov. 6  
no.1:57-81 '64

GASTOL, Blazej; HOLOWIECKA, Ewa; KOTTEK, Krystyna

Evaluation of the nutritional status of children and adolescents in children's homes in the Cracov region according to the thickness of the subcutaneous adipose tissue, hemoglobin level, erythrocyte count, blood protein level and vitamin C level. Folia med. Cracov. 6 no.3:343-353 '64.

BIRECKI, Mieczyslaw; GASTOL, Jozef

Preliminary studies of the influence of plants on the development and decomposition of humus organic matter, as well as on the soil structure, in the rotation of crops. Roczn. nauk roln. 82 no.1:145-190 '60. (KEAI 10:7)

(Poland--Rotation of crops) (Soils)  
(Organic compounds)

L 5370-66 EWT(m)/EPF(c)/EWP(v)/EWP(j)/T WW/RM

ACC NR: AP5024576

SOURCE CODE: UR/0292/65/000/009/0010/0013

AUTHOR: Alekseyevskiy, V. V. (Corresponding member AN ArmSSR); Chatinyan, Yu. S.  
(Candidate of technical sciences); Gastyan, L. K. (Engr.); Alchudzhyan, L. V.  
(Engr.)

ORG: none

TITLE: Electrical machinery up to 100 kw with open slots and magnetic wedges

SOURCE: Elektrotehnika, no. 9, 1965, 10-13

TOPIC TAGS: synchronous machine

ABSTRACT: Heretofore, synchronous generators up to 100 kw capacity have had "soft" coils embedded in semiclosed slots, which has required much labor for building generators. A possibility has been investigated to build these machines with prefabricated thermosetting-plastic-bonded coils placed in open slots and covered with magnetic wedges. Of many combinations tested, a 90%-iron 10%-bakelite-powder press composition is reported as the best material for the magnetic wedges. Three synchronous generators, 6.75, 75, and 125 kva, remodeled for the magnetic-

Card 1/2

UDC: 621.313.042.1.001.8

L 5370-66

ACC NR: AP5024576

wedge construction, were tested (numerical results tabulated). It is found that:  
(1) The use of magnetic wedges, instead of glass-textolite ones, results in a lower weight of copper and a higher efficiency thanks to lower excitation current and lower no-load losses; (2) The reactances  $x_p$ ,  $x_s$ ,  $x_q'$ ,  $x_q''$  increase, when the magnetic wedges are used, within a permissible range; (3) Practical adoption of magnetic wedges would require better press molds and a more suitable (than bakelite) bond material. Orig. art. has: 4 figures and 4 tables.

SUB CODE: EE/ SUBM DATE: 00/ ORIG REF: 000/ OTH REF: 000

PC  
Card 2/2

ПАРНИТСКИЙ, А.Б., dotsent, kandidat tekhnicheskikh nauk; EYDINOV, M.S.,  
kandidat tekhnicheskikh nauk; ANTONOV, N.Ye., inzhener; GASUKOV,  
V.S., inzhener.

Working cycle study of mine hoisting machinery. Sbor.st.Ural.poli-  
tekh.inst. no.47:78-90 '53. (MLRA 8:1)  
(Mine hoisting)



USSR/Medicine - Dysentery  
Medicine - Magnesium Sulfate,  
Administration and Dosage

Aug 48 .

"Experiment in Treating Acute Dysentery by In-  
travenous Injection of Magnesium Sulfate," A. Ya.  
Gasul', Leningrad, Dysentery Dept, Hosp imeni  
Lenin, 1 p

"Sov Med" No 8

Present-day sulfamide therapy for dysentery is not  
always effective. Describes subject method and  
shows why it is recommended. It is still a new  
therapy, and needs much study to perfect it.  
About 66% complete cures can be effected.

24/49T82

GASUL' A.Ya.

Treatment of chronic dysentery with blood transfusion and magnesium sulfate. Sovet.med. No.3:13-14 Mar 51. (CIML 20:6)

1. Head of the Dysentery Division of the Hospital imeni Lenin, Lenin-grad.

KEYDANSKIY, O.V.; GASUL', M.Yu.

Equipment for machining fiber-plastic parts. Mashinostroitel'  
no.5:35-36 My '62. (MIRA 15:5)  
(Plastics machinery)

GASUL', R. Ya.

[Cancer and its control; a popular account] Rak i borot'ba z nym;  
naukovo-populiarnyi narys. Kyiv, Derzh. Med. vyd-vo, 1946. 15 p.  
(MIRA 11:10)

(CANCER)

GASUL, R. Ye., ZELITSBERG, L. I. i GINTFORDMAN, I. Ye.

1949

GASUL, R. Ye., ZELITSBERG, L. I. i GINTFORDMAN, I. Ye. Plazmennyi i ranniy  
Vysavlenii. Tuberkuleza v dety. - V ogl. Z-y art. P. K. GINTFORDMAN, I. Ye. i  
Zapis i Nauch-issled. in-ta tuberkuleza v Gessr, Ch. 1, 1949, s. 45-48.

SO: Ietopis' Zhurnal'nykh Statey, No. 10, Moskva, 1949.

GASUL', R. YA.

33488. Rol' Rentgenokimografii V Diferentsial'noy Diagnostike Zabolevaniy Zheludka.  
Terapevt. Arkhiv, 1949, Vyp. 5, c. 32-36

SO: Ietopis'nykh Statey, Vol. 45, Moskva, 1949

GASUL', R.Ya.

One of the causes in erroneous interpretation of thoracic roentgenograms. Prob.tyberk., Moskva No.1:73 Jan-Feb 51. (CLML 20:6)

GASUL', R.Ya., prof. (Zaporozh'ye)

— Review of V.T. Karpukhin's "Health regimen and therapeutic diet in urinary calculi cases." Urologia 24 no.2:81 Mr-Apr '59. (MIRA 12:12)

(CALCULI, URINARY)

(KARPUKHIN, V.T.)



GASUL', R.Ya., prof.; BUDYKO, A.L.

Activity of the Zaporozh'ye Province Society of Roentgenologists and Radiologists for 1957-1958. Vest.rent. 1 rad. 34 no.4:93-94 J1-Ag '59.  
(MIRA 12:12)

1. Predsedatel' Zaporozhskogo oblastnogo nauchnogo obshchestva rentgenologov i radiologov.

(ZAPOROZH'YE PROVINCE--RADIOLOGY, MEDICAL)

GASUL', R.Ya., prof.

Activity of the Zaporozh'ye Province Scientific Society of  
Roentgenologists and Radiologists. Vest. rent. i rad. 36  
no.5:77-78 S-0 '61. (MIRA 15:1)

1. Predsedatel' pravleniya Oblastnogo zaporozhskogo nauchnogo  
obshchestva rentgenologov i radiologov.  
(ZAPOROZH'YE PROVINCE\_\_RADIOLOGISTS)

GASUL', R.Ya., prof.; BUDYKO, A.L.

Activity of the Zaporozh'ye Province Scientific Society of  
Roentgenologists and Radiologists for 1962. Vest. rent. i rad.  
38 no.5:71-72 S-O '63 (MIRA 16:12)

1. Predsedatel' pravleniya Zaporozhskogo oblastnogo nauchnogo  
obshchestva rentgenologov i radiologov (for Gasul'). Sekretar'  
Zaporozhslogo oblastnogo nauchnogo obshchestva rentgenologov  
i radiologov.

GASUL', R.Ya., prof. (Zaporozh'ye)

Review of V.T.Karpukhin's book "Urolithiasis." Urologia. 29 no.2:  
80-81 Mr-Apr '64. (MIRA 18:7)

43978

S/238/62/008/006/001/005  
D268/D308

27.1230

GASULL, R. Ya.

AUTHOR:

~~Kasull, Ya. R.~~

TITLE:

On the possibility of constructing models of  
thought functions

PERIODICAL:

Fiziologichnyy zhurnal, v. 8, no. 6, 1962, 790-794

TEXT:

Recent literature is briefly reviewed and the natural limits for modelling thought functions are considered. The possibility has recently been demonstrated of utilizing a process in cybernetic apparatus in which the solution of a problem is achieved by selection from a combination of variants. The extent to which this can increase the possibility of modelling thought processes is examined. The views of U.R. Eshby (in the collection 'Avtomaty', M., 1956) postulating that from the intellectual point of view automata can operate at a higher level than their designers, are disputed. It is shown that the self-organizing processes in the machine require specific premises previously introduced into the automaton for their realization. The behavior of the homeostat

Card 1/2

On the possibility ...

S/238/62/008/006/001/005  
D268/D308

is, in the last resort, dependent on the human assignment. In the Eshby homeostat this assignment is given in the form of a specific selector constructor. Whatever region of thought it may seem possible to model, this will still not imply complete substitution of the activity of the automaton for human thought. A nucleus always remains the exclusive prerogative of man, such as the recognition of the requirements, identification of the problem, and the statement of the aim to which man directs the course of his thought. X

ASSOCIATION: Zaporiz'ka oblasna psykhiatrychna likarnya  
(Zaporozh'ye Regional Psychiatric Hospital)

SUBMITTED: July 18, 1961

Card 2/2

117 AND 118 (2218)

117 AND 118 (2218)

PROCESSING AND PROPERTY INDEX

7

CA

Quantitative spectral analysis of steel in the ultraviolet region of the spectrum. I. A. Pikhman and B. Ya. Gaidar. *Zhurnal Fiz. Khim.* 18, 104-73 (1945).-- Nomographic method constructed from the contrast factor of the photographic plate and the "transformation factor" (C.A. 27, 2519). The lines used for the determination were: W 207.1 and Fe 200.78 Å. (for large contents of W the line Fe 200.78 Å. was used); Cr 207.1 and Fe 200.78 Å. for small contents of Cr; Co 200.9 and Fe 200.78 Å. for medium contents of Co; and high contents of Co (up to 15-20%); the doublets Ni 310.07 and Ni 310.1 Å. and triplets Fe 310.07, Fe 310.31, and Fe 300.00 Å. for Ni; Fe 2516.1 and Fe 2518.1 Å. for Mn; Mn 2803.3 and Fe 2826.6 Å. for Mn; Mo 3170.3 and Fe 3003.4 Å. for up to 0.5% of Mo in steel contg. V and no Al; Mo 2644.13 and Fe 2823.2 Å. for 2-5% of Mo; V 3110.71 and Fe 3003.0 Å. for up to 1% of V; V 2962.5 and Fe 2821.2 Å. for 1.0-3% of V; Al 3082.102 and Fe 3061 Å. for Al. See references. W. R. Henn

ASB-11A METALLURGICAL LITERATURE CLASSIFICATION

10000 10000-1 10000-2 10000-3 10000-4 10000-5 10000-6 10000-7 10000-8 10000-9 10000-10 10000-11 10000-12 10000-13 10000-14 10000-15 10000-16 10000-17 10000-18 10000-19 10000-20 10000-21 10000-22 10000-23 10000-24 10000-25 10000-26 10000-27 10000-28 10000-29 10000-30 10000-31 10000-32 10000-33 10000-34 10000-35 10000-36 10000-37 10000-38 10000-39 10000-40 10000-41 10000-42 10000-43 10000-44 10000-45 10000-46 10000-47 10000-48 10000-49 10000-50 10000-51 10000-52 10000-53 10000-54 10000-55 10000-56 10000-57 10000-58 10000-59 10000-60 10000-61 10000-62 10000-63 10000-64 10000-65 10000-66 10000-67 10000-68 10000-69 10000-70 10000-71 10000-72 10000-73 10000-74 10000-75 10000-76 10000-77 10000-78 10000-79 10000-80 10000-81 10000-82 10000-83 10000-84 10000-85 10000-86 10000-87 10000-88 10000-89 10000-90 10000-91 10000-92 10000-93 10000-94 10000-95 10000-96 10000-97 10000-98 10000-99 10000-100

GASUL', Ye. R. (Zaporozh'ye)

Congenital marble disease with mental disorders. Klin. med. no.9:  
129-132 '61. (MIRA 15:6)

1. Iz Zaporozhskoy oblastnoy psikhonevrologicheskoy bol'nitsy  
(glavnyy vrach I. Ya. TSinman)

(BONES--DISEASES) (MENTAL ILLNESS)



*G. ASH MCV A. G. M.*  
GASUMOVA, G.M.

Discovering a representative of the genus *Citrophylum* Berry in  
Azerbaijan. Dokl. AN Azerb. SSR 13 no.8:869-871 '57. (MIRA 10:9)

1. Institut geologii Azerbaydzhanskoy SSR. Predstavleno akademikom  
AN Azerbaydzhanskoy SSR M.M.Aliyevym.  
(Shaumyanovsk District--*Citrophylum*) (Paleobotany)

GASUMOV, G.M.

Certain linear boundary value problems for elliptic equations.  
Izv. AN Azerb. SSR. Ser. fiz.-mat. i tekhn. nauk no.6:33-46 '63.  
(MIRA 17:3)

GASUMOV, G.M.

Nonlinear problem for elliptic equations. Izv. AN Azerb. SSR.  
Ser. fiz.-tekh. i mat. nauk no.2:49-59 '64.

(MIRA 17:10)

GASUNOV, Yu.; FAINROTSH, V.

Pneumatic and hydraulic step-by-step proportioner. Trakt. i  
sel'skhozvuzh. no.12:40-41 D '61 (1961 12:2)

1. Nauchno-issledovatel'skiy institut tekhnologii i ma-  
i sel'skokhozyaystvennogo mashinostroyeniya.